

REMARKS

Claims 1-6 are pending. By this Amendment, Claim 1 is amended. Applicant respectfully submits no new material is presented herein.

Claims Rejected—35 U.S.C. § 102

Claim 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,348,044 to Wood, III ("Wood"). Applicant respectfully traverses the rejection.

Claim 1 recites a hand device for a working robot including, among other features, a grip capable of gripping or releasing a workpiece; a movable body provided on a driving base so as to extend or retract by a driving means; and a workpiece drop prevention means for preventing a workpiece from dropping by attaching to the movable body to stop the releasing movement of the grip when the driving means is stopped, wherein the workpiece drop prevention means further comprises a protrusion stick with a tapered tip, a support rail supporting the protrusion stick so as to slide the protrusion stick between a protrusion position wherein the protrusion stick abuts the movable body and a retracted position wherein the protrusion stick is free from contacting the moveable body.

Wood discloses an article gripping apparatus (19) having a moveable housing (21), which is slideably carried in a loader support block (22). A yoke (23) is attached to both the housing (21) and a piston (24), which is slideable within a cylinder 20, so that the housing (21) may be advanced and retracted relative to the support block (22). The housing (21) includes a finger housing (30) and a pair of fingers (32) pivotably connected to the finger housing (30) with pivot pins (31). A bell crank portion (34)

formed on a body (34b) and extending inwards is also pivotably mounted on the pins (31). Each bell crank portion (34) is received into a tapered groove (35) formed in an outer end of a linear actuator (36) and includes tapered surface (37) extending therefrom. The linear actuator (36) includes a piston portion (42), a shaft portion (46), and a fluid port (71) extending through the shaft portion (46). The piston portion (42) is journaled for sliding within a cylindrical bore (43) of a wedge block (38). The wedge block (38) is axially-supported for movement within a bore (39) of the housing (21) and includes a taper (41) capable of engaging the tapered surfaces (37). The cylindrical bore (43) extends to a terminal shoulder surface (44) within the wedge block (38) to form an expansible pressure chamber (45). A hole (72) provides communication between the fluid port (71) and the pressure chamber (45).

However, Wood does not disclose each and every feature recited in Claim 1. Particularly, Wood does not disclose or suggest a workpiece drop preventing means for preventing a workpiece from dropping by attaching to the movable body to stop the releasing movement of the grip when the driving means is stopped, wherein the workpiece drop prevention means further comprises a protrusion stick with a tapered tip, a support rail supporting the protrusion stick so as to slide the protrusion stick between a protrusion position wherein the protrusion stick abuts the movable body and a retracted position wherein the protrusion stick is **free from contacting** the moveable body.

The Office Action asserts that Woods includes a workpiece drop prevention means (wedge block (38)) for preventing a workpiece from dropping by attaching to a moveable body (piston portion (42)) to stop the releasing movement of the grip (gripping

apparatus (19)) when the driving means (collar (49)) is stopped. The workpiece drop prevention means (wedge block (38)) further comprises a protrusion stick (wedge block (38)) with a tapered tip (taper (41)), a support rail (piston portion (42)) supporting the protrusion stick (wedge block (38)) so as to slide the protrusion stick (wedge block (38)) between a protrusion position wherein the protrusion stick (wedge block (38)) abuts on the moveable body (piston portion (42)), and a recess position. However, as clearly indicated in Figure 2 of Wood, the wedge block (38) is **always** in contact with the piston portion (42), because the piston portion (42) is journaled within the cylindrical bore (43) of a wedge block (38). Conversely, Claim 1 recites a retracted position wherein the protrusion stick is **free from contacting** the moveable body. As such, Woods does not disclose or suggest each and every feature recited by Claim 1.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. M.P.E.P. § 2131. Therefore, for at least the reasons explained above, Applicant respectfully submits that Wood does not disclose or suggest each and every feature recited by Claim 1 and, hence, does not anticipate Claim 1. Accordingly, Applicant respectfully submits that Claim 1 should be deemed allowable.

Claims 2-6 depend from Claim 1 and, as such, incorporate each and every feature recited therein. Therefore, Applicant respectfully submits that Claims 2-6 should be deemed allowable for at least the reasons Claim 1 is allowable, as well as for the additional subject matter recited therein.

Consequently, Applicant respectfully requests withdrawal of the rejection.

Claims Rejected—35 U.S.C. § 103

Claims 5-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wood in view of U.S. Patent No. 4,304,433 to Langowski ("Langowski"). Applicant respectfully traverses the rejection.

Wood is described above.

Langowski discloses a pipe gripping head (11) having a pair of opposed arms (25, 25') pivotably secured to a frame (13) with pins (31, 31'), respectively. The opposed arms (25, 25') include jaw ends (32, 32'), respectively. A back end of the opposed arms (25, 25') extending beyond the pins (31, 31') are pivotably attached to actuating links (39, 39'), respectively. Opposite ends of the links (39, 39') are pivotably attached to an output shaft (43) of a cylinder (41) via a connection bar (45). When the output shaft (43) is extended, the opposed arms (25, 25') pivot into a release state. When the output shaft (43) is retracted, the connection bar (45) and ends of the links (39, 39') are urged towards a closed end (17) of frame (13). Because the opposite ends of the links (39, 39') are constrained to travel in an arc about pivot pins (31, 31'), the opposed arms (25, 25') are forced to pivot in a clockwise direction about pivot pins (31, 31'), closing the jaw ends (32, 32'). Moreover, when the output shaft (43) is fully retracted, as shown in Figure 1, the links (39, 39') and the connecting bar (45) are rigidly aligned serving to lock the jaw ends (32, 32') around a pipe.

Claims 5 and 6 depend from Claim 1 and, therefore, incorporate each and every feature recited therein. Langowski, however, does not make up for the deficiencies of Wood, because, like Wood, Langowski does not teach or suggest a workpiece drop prevention means for preventing a workpiece from dropping by attaching to the movable

body to stop the releasing movement of the grip when the driving means is stopped, wherein the workpiece drop prevention means further comprises a protrusion stick with a tapered tip, a support rail supporting the protrusion stick so as to slide the protrusion stick between a protrusion position wherein the protrusion stick abuts the movable body and a retracted position wherein the protrusion stick is free from contacting the moveable body.

Further, there is no motivation to combine the teachings of Wood and Langowski. The Office Action asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the invention of Wood the links (39, 39') of Langowski to connect the clamping fingers (32) and the actuator (36) of Wood. However, such a combination would render the Wood device inoperable. As explained above and as shown in Figure 1 of Langowski, in a clamped state, *i.e.*, when the output shaft (43) is fully retracted, the links (39, 39') and the connecting bar (45) are ***rigidly aligned***. In such a state, the taper (41) of the wedge block (38) could not engage the bell crank portion (34), or any other portion of the clamp fingers (32), to lock the clamp fingers (32) to the work piece (11), because the taper (41) would contact a side of the actuating links (39, 39'). As a result, the gripping assembly (19) could not secure a work piece between the clamping fingers (32). Thus, the Wood device would be inoperable and unsatisfactory for its intended purpose.

To establish *prima facie* obviousness, all claim features must be taught or suggested by the prior art. M.P.E.P. § 2143.03. Also, there must be some suggestion or motivation, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference

teachings. M.P.E.P. § 2142. "If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." M.P.E.P. § 2143.01. Accordingly, contrary to the Examiner's assertion, there is no motivation to combine the actuating links (39, 39') of Langowski with the device of Wood. Because Langowski does not make up for the deficiencies of Wood and because the combination of the links (39, 39') of Langowski with the device of Wood would render the Wood device inoperable and, therefore, unsatisfactory for its intended purpose, there is no motivation to combine the teachings of Wood and Langowski. Accordingly, Applicants respectfully submit that the Office Action has failed to establish *prima facie* obviousness.

Accordingly, Applicants respectfully request withdrawal of the rejection.

Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of Claims 1-6, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 024446-00007.**

Respectfully submitted,
ARENT FOX PLLC

A handwritten signature in black ink, appearing to read "Darien Reddick", written in a cursive style.

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